What is claimed is:

1. A microwave oscillator for inducing parallel feedback from collector to a base of a bipolar transistor, comprising:

(a) a first microstrip line with a released end coupled to said base terminal,

(b) a second microstrip line with a released end coupled to said collector terminal,

(c) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line, and

(d) a high impedance line for bias supply to said base terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$,

wherein $\lambda g1$ is a guide wavelength of the first microstrip line at an oscillation frequency of said microwave oscillator.

2. A microwave oscillator for inducing parallel feedback from a collector to a base of a bipolar transistor, comprising:

(a) a first microstrip line with a released end coupled to said base terminal,

(b) a second microstrip line with a released end coupled to said collector terminal,

(c) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line,

(d) a high impedance line for bias supply to said base terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$, and

(e) a high impedance line for bias supply to said collector terminal

coupled at a position where the distance from the released end on said second microstrip line to the point closest to the center of said dielectric resonator is λg2/4,

wherein λg1 and λg2 are a guide wavelengths of the first microstrip line and the second microstrip line respectively at the oscillation frequency of said microwave oscillator.

3. A microwave oscillator for inducing parallel feedback from a drain to a gate of a field effect transistor, comprising:

(a) a first microstrip line with a released end coupled to said gate terminal,

(b) a second microstrip line with a released end coupled to said drain terminal,

(c) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line, and

(d) a high impedance line for bias supply to said gate terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is λg1/4,

wherein λg1 is a guide wavelength of the first microstrip line at an oscillation frequency of said microwave oscillator.

4. A microwave oscillator for inducing parallel feedback from a drain to a gate of a field effect transistor, comprising:

(a) a first microstrip line with a released end coupled to said gate terminal,

(b) a second microstrip line with a released end coupled to said drain terminal,

(c) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line,

(d) a high impedance line for bias supply to said gate terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$, and

(e) a high impedance line for bias supply to said drain terminal coupled at a position where the distance from the released end on said second microstrip line to the point closest to the center of said dielectric resonator is $\lambda g2/4$,

wherein $\lambda g1$ and $\lambda g2$ are a guide wavelengths of the first microstrip line and the second microstrip line respectively at the oscillation frequency of said microwave oscillator.

5. A low-noise converter incorporated in a microwave receiving antenna comprising:

(a) a waveguide for transmitting a satellite signal received in said receiving antenna,

(b) a waveguide probe for converting the satellite signal in said waveguide into a microstrip line mode,

(c) a low-noise amplifier of which input port is coupled to said waveguide probe,

(d) a mixer for receiving an output signal of said low-noise amplifier, and

(e) a local oscillator of which output port is coupled to said mixer,

wherein said local oscillator includes a microwave oscillator for inducing parallel feedback from collector to a base of a bipolar transistor, comprising:

(i) a first microstrip line with a released end coupled to said base terminal,

(ii) a second microstrip line with a released end coupled to said collector terminal,

(iii) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line, and

(iv) a high impedance line for bias supply to said base terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$,

wherein $\lambda g1$ is a guide wavelength of the first microstrip line at an oscillation frequency of said microwave oscillator.

6. A low-noise converter incorporated in a microwave receiving antenna comprising:

(a) a waveguide for transmitting a satellite signal received in said receiving antenna,

(b) a waveguide probe for converting the satellite signal in said waveguide into a microstrip line mode,

(c) a low-noise amplifier of which input port is coupled to said waveguide probe,

(d) a mixer for receiving the output signal of said low-noise amplifier, and

(e) a local oscillator of which output port is coupled to said mixer,

wherein said local oscillator includes a microwave oscillator for inducing parallel feedback from a collector to a base of a bipolar transistor, comprising:

(i) a first microstrip line with a released end coupled to said base terminal,

(ii) a second microstrip line with a released end coupled to said collector terminal,

(iii) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line,

(iv) a high impedance line for bias supply to said base terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$, and

(v) a high impedance line for bias supply to said collector terminal coupled at a position where the distance from the released end on said second microstrip line to the point closest to the center of said dielectric resonator is $\lambda g2/4$,

wherein $\lambda g1$ and $\lambda g2$ are a guide wavelengths of the first microstrip line and the second microstrip line respectively at the oscillation frequency of said microwave oscillator.

7. A low-noise converter incorporated in a microwave receiving antenna comprising:

(a) a waveguide for transmitting a satellite signal received in said receiving antenna,

(b) a waveguide probe for converting the satellite signal in said waveguide into a microstrip line mode,

(c) a low-noise amplifier of which input port is coupled to said waveguide probe,

(d) a mixer for receiving the output signal of said low-noise amplifier,

and

(e) a local oscillator of which output port is coupled to said mixer,

wherein said local oscillator includes a microwave oscillator for inducing parallel feedback from a drain to a gate of a field effect transistor, comprising:

(i) a first microstrip line with a released end coupled to said gate terminal,

(ii) a second microstrip line with a released end coupled to said drain terminal,

(iii) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line, and

(iv) a high impedance line for bias supply to said gate terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$,

wherein $\lambda g1$ is a guide wavelength of the first microstrip line at an oscillation frequency of said microwave oscillator.

8. A low-noise converter incorporated in a microwave receiving antenna comprising:

(a) a waveguide for transmitting a satellite signal received in said receiving antenna,

(b) a waveguide probe for converting the satellite signal in said waveguide into a microstrip line mode,

(c) a low-noise amplifier of which input port is coupled to said waveguide probe,

(d) a mixer for receiving the output signal of said low-noise amplifier,

and

(e) a local oscillator of which output port is coupled to said mixer,

wherein said local oscillator includes a microwave oscillator for inducing parallel feedback from a drain to a gate of a field effect transistor, comprising:

(i) a first microstrip line with a released end coupled to said gate terminal,

(ii) a second microstrip line with a released end coupled to said drain terminal,

(iii) a dielectric resonator electromagnetically coupled to said first microstrip line and said second microstrip line,

(iv) a high impedance line for bias supply to said gate terminal coupled at a position where a distance from the released end on said first microstrip line to a point closest to a center of said dielectric resonator is $\lambda g1/4$, and

(v) a high impedance line for bias supply to said drain terminal coupled at a position where the distance from the released end on said second microstrip line to the point closest to the center of said dielectric resonator is $\lambda g2/4$,

wherein $\lambda g1$ and $\lambda g2$ are a guide wavelengths of the first microstrip line and the second microstrip line respectively at the oscillation frequency of said microwave oscillator.